30th Space Wing



Safety Board Training for Board Presidents

30 SW/SEF









Integrity - Service - Excellen



Overview



- When and why to investigate
- Types of safety boards
- Mishap categories and classes
- Initial Disaster Response
- The SIB
- The ISB and Initial Actions
- Typical Timeline

- Diagramming the Mishap Site
- Moving wreckage
- Photography
- Interviewing witnesses
- Safety Privilege
- Lessons Learned
- Final Thoughts

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When and Why Investigate?



Purpose Of This Training



To familiarize you with your duties as an Interim Safety Board or Safety Investigation Board President



Why Investigate?



It is simple...Safety investigations and reports are conducted and written solely to prevent future mishaps



When To Investigate?



- Mishap Boards Are Based On Mishap Class
 - This is determined before Board is Convened
- When are boards convened?
 - For All Class A Mishaps
 - For Some Class B Mishaps
 - If Commander Directs



SIBs vs. AIBs



- They are both the same, right?
 - WRONG!!
- The Accident Investigation Board (AIB) is:
 - A legal investigation
 - Provides a publicly releasable report of the facts and circumstances surrounding a mishap
 - An AIB gathers and preserves evidence for claims, litigation, disciplinary and adverse action
 - Assigns "liability" or legal blame
- A Safety Investigation Board (SIB) is
 - Conducted to prevent future mishaps.
 - A SIB is not punitive in any way.
 - Ensures commanders quickly obtain accurate mishap information
 - A tool that promotes safety, combat readiness and mission accomplishment



SIBs vs. AIBs



- Both are vital, however.....
- SIB has priority
- Accident investigators must interview witnesses, obtain and analyze evidence and inspect the scene of the accident after the SIB.
- Accident investigation may begin before the safety investigation is complete, but must not interfere with the SIB
 - SIB releases wreckage to Accident Investigation
 - SIB releases witnesses
 - SIB provides part I of safety report



Two Types of Safety



Boards

- Temporary Board
- Interim Safety Board (ISB)
 - Preserve Evidence
 - Tox Testing
 - Site Photography
 - Fluid Samples
 - Witness Statements
 - Record Collection

- Formal Board
- Safety Investigation Board (SIB)
 - Investigate Mishap
 - Develops:
 - Findings
 - Causes
 - Recommendations
 - Issues formal report
 - Briefs convening authority

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Mishap Categories



- Nuclear
- Space
- Aviation
- Guided Missile
- Explosives and Chemical Agents
- Directed Energy
- Afloat
- Motor Vehicle
- Off-Duty Military
- Ground and Industrial



Mishap Classes



<u>CLASS A MISHAP:</u> A mishap resulting in one or more of the following:

- Direct mishap cost totaling \$1,000,000 or more
- A fatality or permanent total disability
- Destruction of a DoD aircraft.
 - NOTE: A destroyed UAV is not a Class A mishap unless at least one of the two qualifiers above apply



Mishap Classes



<u>CLASS B MISHAP:</u> A mishap resulting in one or more of the following:

- Direct mishap cost totaling \$200,000 or more but less than \$1,000,000
- A permanent partial disability
- Inpatient hospitalization of three or more personnel. Do not count or include individuals hospitalized for observation, diagnostic, or administrative purposes that were treated and released.



Mishap Classes



CLASS C MISHAP: A mishap resulting in one or more of the following:

- Direct mishap cost totaling \$20,000 or more but less than \$200,000
- An injury resulting in any loss of time from work beyond the day or shift on which it occurred; or occupational illness that causes loss of time from work at any time
- An occupational injury or illness resulting in permanent change of job

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Initial Disaster Response



Bang - Boom -



- Fire -- Medical -- OSC -- ISB
- Preserve Life/Minimize Injuries
- Preserve Resources
- Minimize Collateral Damage
- Preserve Evidence



When the fire is out...the investigation I



"Nearest Base" Concept

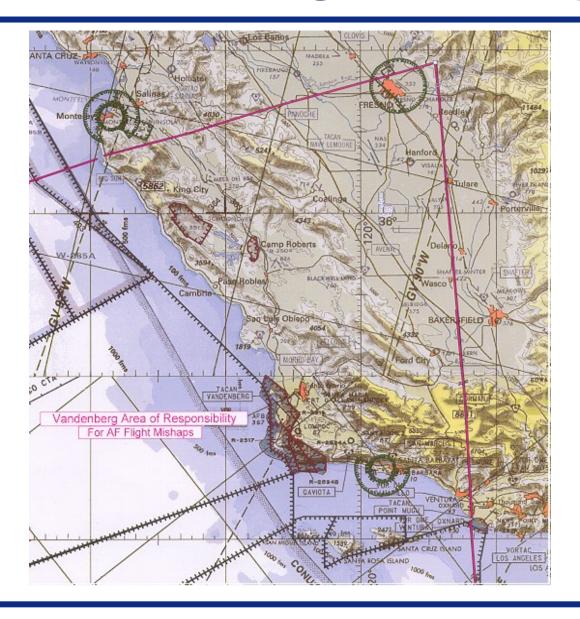


- The nearest AF base to a mishap will:
 - Respond to the mishap
 - Activate the disaster response force
 - Appoint an Interim Safety Board to preserve evidence
 - Act as the "host" base for the Safety Investigation Board (SIB)
 - Communications
 - Transportation
 - Shelter
 - Care and feeding
 - Etc



AOR for Flight Mishaps







DRF Composition



Battle Staff or CAT Disaster Control Group

Control Centers

Specialized Teams

Initiating initial disaster response actions, appointing ISB, etc....

Responding to the site...

UCCs: Search a recovery, TransportationHAZMAT, Chaplain Spill etc. response

Search and recovery, HAZMAT, Spill response, Hydrazine response, Shelter managemen t



Following a Mishap...



Command Post

AND

Safety Office

AND

Interim Safety Board

Initial Notifications / initial reports

Sending out prelim reports, POC For ISB....

Gathering evidence, initial interviews, etc



On Scene Commander



- The fire chief or senior on-duty fire fighter is in command of the mishap scene until the fire is extinguished and rescue efforts are completed
- STOPS after rescue efforts complete and fire's out
- Responsibility for the mishap site <u>always</u> resides with the On-Scene Commander from the time of the mishap until all restoration actions are complete
- OSC allows ISB on scene after site is SAFE and supports ISB/SIB efforts

Bottom Line: OSC owns the site, SIB President owns the wreckage

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The Safety Investigation Board



Primary Board Members



- President
- AFSC Representative
- Investigating Officer
- Medical Member
- Maintenance Member
- Pilot / Ops Member
- Recorder (non-voting)
- Note that AFI 91-204 deliberately avoids prescribing a specific list of mandatory members or member qualifications for ISBs...just for SIBs



Board President



- Qualifications
 - Colonel or Higher
 - O-7 if Fatality
 - Rated (P or N)
 - From Outside Mishap Wing
 - Graduate of Board President Course

- Responsibilities
 - Conduct of the Board
 - Formal Report
 - Reviews/Releases all reports
 - Handles/Approves all media requests
 - The final point of release for all information (including electronic/digital media, photographs, etc.) from the investigation
 - MAJCOM/CC Briefing
 - "Feces filter"

51% of the VOTE



Safety Center



Representative Responsibilities

- Qualifications
 - Assigned to AFSC
 - Experience in major weapon system group

- Safety expert
- Coordinate outside expertise
- Report writing expert

USUALLY WILL HAVE AN AFSC REP FOR CLASS Bs AND ABOVE



Investigating Officer



- Qualifications
 - Graduate of FSO/AMIC
 - Rated (Flight), Operator/ Maintainer (All Other)
 - Current or previous qualification in mishap aircraft (desired)

- Responsibilities
 - Coordinates daily activities
 - Coordinates logistics issues
 - Transportation
 - PQDR's
 - Wreckage removal
 - Conducts Interviews
 - Investigation Expert



Pilot / Ops Member



Qualifications

- Flight Current/ Qualification In Mishap Aircraft (IP Preferred)
- Others Qualified Operator

Responsibilities

- Analyzes All Operations Factors
 - Weather
 - ATC
 - Training Records
 - Proficiency
 - Communications
 - Crew actions
 - Anything else of value
- Secures all ops related records
- Reconstructs sequence of events
- Conducts interviews



Medical Member



- Qualifications
 - Flight Flight Surgeon
 - Flown in similar type aircraft (Desired)
 - Can Substitute Material Officer For Space/ Missile (When No Human Factors Involved)

Responsibilities

- Human Factors investigation
- Tox testing
- Other lab tests
- Secures All Medical Records
- Evaluates medical histories, records, laboratory, radiological, and pathology reports
- Autopsies
- Civilian coroner usually has jurisdiction off base



Maintenance Member



Qualifications

- Fully Qualified Maintenance Officer or Senior NCO
- AFSPC may use QAE's
- 2 years mx experience in mishap aircraft
- Desired: AMIC Graduate (officers)
- Desired: AETC JEMIC (officer/enlisted)

Responsibilities

- Reviews and investigates all maintenance-related matters
- Airframe Expert
- Reconstructs Mishap Aircraft
- Determines need for DR's, etc.



Recorder



- Qualifications
 - Host base administrator
 - Board day-to-day activities coordinator

- Responsibilities
 - Setup board room
 - Make arrangements for permanent board
 - Implement Post-Mishap Board Plan
 - Establish secretary pool
 - Prepare message reports
 - Assemble Formal Report
 - Must quickly establish filing system and ensure its maintenance



Other Members



- Voting (if BP determines the area of expertise to be a factor, otherwise nonvoting)
 - ATC
 - Weather
 - Weapons
 - Life Support
 - Nuclear
 - AFOTEC (if OT&E involved)
 - Jumpmaster
 - Other service representatives
 - Crash Fire Rescue Specialist

- Non-Voting
 - Manufacturers Rep
 - FAA/NTSB
 - Technical Experts
 - Human Factors Experts
 - Commander's Rep
 - Additional crewmembers



Findings vs Causes



- Findings
 - Chronological sequence
 - Clear statements of single events/Stand alone
 - Sustain the mishap sequence
 - Based on evidence, Judgment and Common Sense

Causes

- Causes are Findings which if eliminated would have prevented the mishap.
- AF uses multiple cause theory
 - Usually not a "Smoking Gun"
- Use Reasonable-Person Criteria



Recommendations



- Actions which will prevent similar mishaps
 - Must be Feasible
 - Related to a cause or finding
 - But Not Required for Every Cause
- Make Sure Recommendations Pass the Common Sense Test

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The ISB and Initial Actions



The ISB



- Convened by individual wing commanders
- Provide an organized, evidence preservation-oriented response to major mishaps in preparation for the arrival of the SIB
- ISBs do NOT "solve" mishaps, just gather data
- Just the facts...do not offer any theories, conjecture, or conclusions you have developed as you hand off the materials and information you have assembled unless specifically asked.
- Hand all information collected (to include copies) to the SIB - YOU WILL NOT KEEP ANYTHING FOR YOURSELF!

Checklists and guides located in ISB "go" kits in FSO truck



Resources



- AFPAM 91-211, Attach 3, Section A3C: Interim Safety Board Member Objectives and Procedures
- AFI 91-22X: Your specific discipline's guide to investigations and reports
 - 221- Weapons
 - 222- Space
 - 223- Aviation
 - 224- Ground
- Both supplement AFI 91-204 on your specific investigation by giving more discipline-specific information
- Recommend getting a copy of both and reviewing prior to an incident



ISB President



- Do not try to combine the duties of On-Scene Commander (OSC) and ISB President into a single individual
- The manager of those actions necessary to gather and preserve evidence, much of which is not at the crash scene
- Stay abreast of travel plans of SIB members, especially the SIB president.
- Ensure workplace and billeting arrangements are in place for all expected out-of-town board members.
- Prepare a "handoff briefing" containing information addressed in AFPAM 91-211, Attach 3, para A3.11.3.3.



When To Take "Control" of



Every Situation is Different

Site Declared "Safe" by Senior Fire Official

After coordination with OSC

(Space) - Site may be underwater or not "safeable" for many days



Major Responsibilities



- At the Mishap scene:
 - Initial walk through
 - Assume "Control" from the OSC
 - Preserve Perishable Evidence
 - Witness identification
 - Preliminary diagram of major components



Initial Walk Through



- Strive for a "macro" look at the scene
- ID all major parts
- Do not disturb or move parts
 - Without prior coordination of SIB BP



Preserve Evidence



- Initial Interviews
 - Direct Involvement: Participants, Eyewitnesses, Wingmen, MFCO, etc.
 - Indirect: Schedulers, Crew Chiefs, SOF, LST members, etc.
- Fluid Samples (One Pint Minimum)
 - From mishap aircraft
 - AGE and Servicing Equipment
 - Consider impounding the fuel truck
 - Originating and enroute locations
 - Air Refueling?



Preserve Evidence





PRESERVATION
OF
EVIDENCE....

DON'T TRY
TO DO THE
ANALYSIS!!!



Preliminary Reporting



- OPREP-3s and PA news releases
 - Ensure you review prior to transmittal
 - Facts + safety privilege
- Preliminary Message (i.e. 8 hour message)
 - Fully Releasable not covered by any safety privilege
 - Facts only
 - Non-privileged Sources



Preliminary Reporting



- What <u>NOT</u> to say in an OPREP 3 or 8 Hour message....
 - THE STUDENT PILOT ON F-15B, TAIL NUMBER 890123, ASSIGNED TO THE NINETY SECOND FIGHTER SQUADRON EXPERINCED STRUCTURAL DAMAGE UPON LANDING AT LAKEVIEW NAS. DURING A NO FLAP LANDING THE STUDENT PILOT FLARED HIGH DROPPING THE AIRCRAFT TO THE RUNWAY, DAMAGING THE TAIL CONE, THE RIGHT HORIZONTAL STABILIZER AND THE RIGHT MAIN LANDING GEAR. THE AIRCRAFT WAS AT 155 KNOTS INDICATED AIRSPEED, WITH THROTTLE IN IDLE. ESTIMATED REPAIR COSTS CAN POTENTIALLY BE AS HIGH AS 675,000 DOLLARS BUT ACTUAL REPAIR COSTS ARE TO BE DETERMINED.



Release of Information



- What not to say:
 - Mishap responsibility
 - Failure of equipment or facilities
 - Legal liability of the government
 - Classified information
 - Cause factors or recommendations
 - Factors not causal in the mishap
 - Statements, quotations or opinions from witnesses or other privileged sources



SIB Arrival Preparation



- Review Progress and Assign Further Duties
- Billeting Arrangements
- Transportation Requirements
- Work Locations
 - On-Base / On-Site
 - Computer Support
 - Communications Support
 - "Hammer ACE"
- Handoff briefing conducted by ISB president
 - Briefing on all known information
 - Complete witness list
 - Actions accomplished and current status
 - Transfer of documents

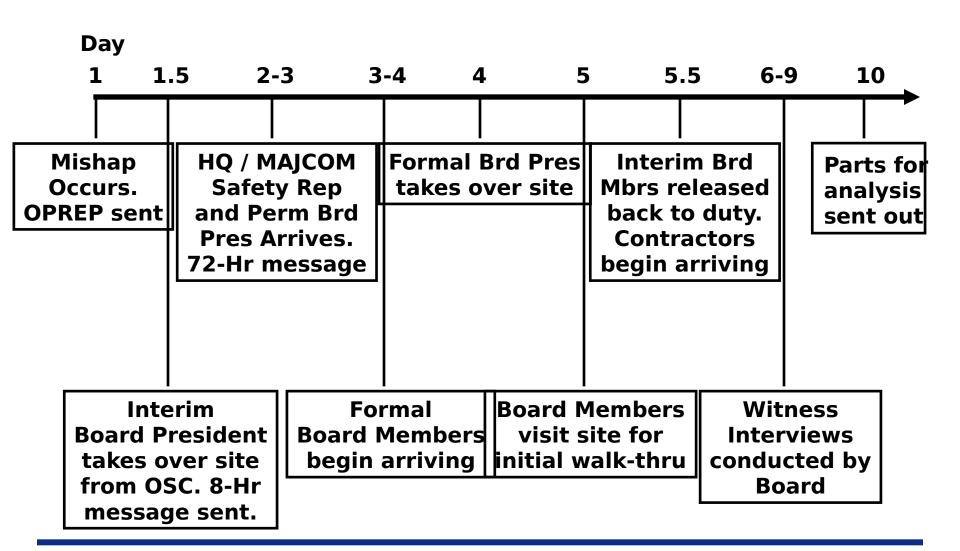
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ISB/SIB Timeline

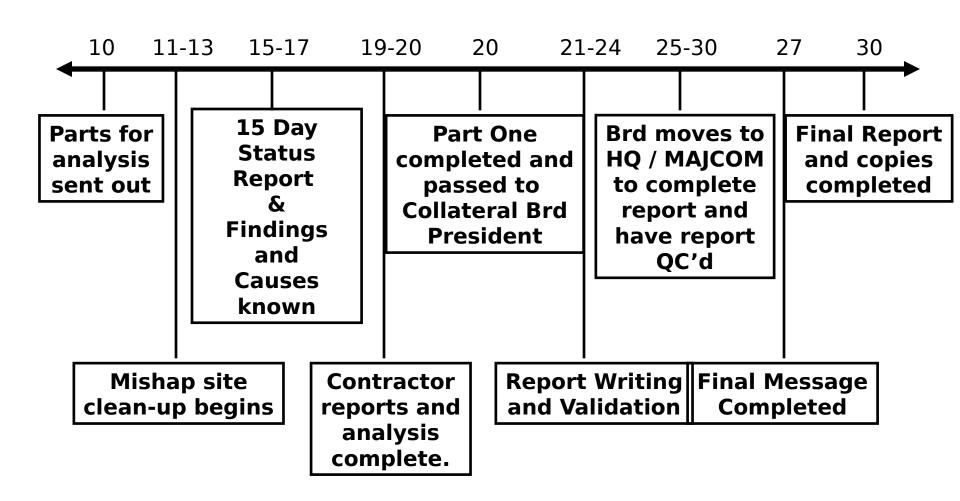






ISB/SIB Timeline

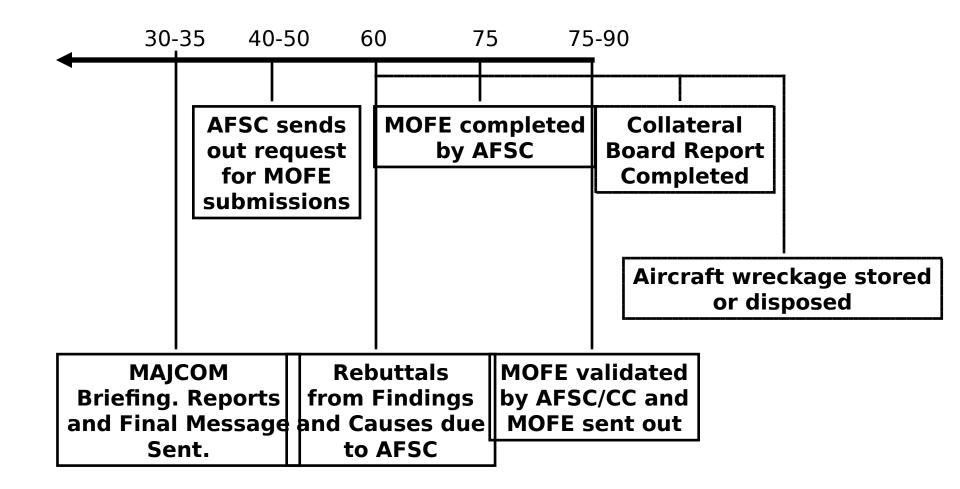






ISB/SIB Timeline





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Mishap Site Diagram



- Use 30 CES for GPS survey
- Ensure EOD and BEE have cleared area
- EOD, Photography, and ISB member should follow CES during the survey



Mishap Site Diagram







Mishap Site Diagram





View of ground scars facing southwest

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Moving Wreckage







Moving Wreckage



- The safety investigation board has inherent priorities over other activities and investigations connected to the mishap
- Includes right to impound Air Force property involved in the mishap.
- SW/CC, in conjunction with SIB president, may choose to move wreckage interfering with essential mission activities or causing a hazard at the mishap scene.
- If wreckage must be moved, thoroughly document the scene (photographs/video) prior to moving anything.

Don't move wreckage unless it <u>must</u> be moved

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- Purpose
 - Documents the Mishap
 - Educates People Who Could Not Observe the Scene Firsthand
- Rules of Thumb
 - Over shoot and under print
 - Label each photograph
- Aerial Photos
 - Get support from 76 HS early on
- Color vs. Black and White Film
 - Color required for human remains





- Generic Time-Sensitive List:
 - Potentially Significant Evidence
 - Ground Scars, etc
 - Medical Evidence
 - Human Remains
 - Wreckage
 - Damage to Private Property
 - Witness Point-of-View Shots





















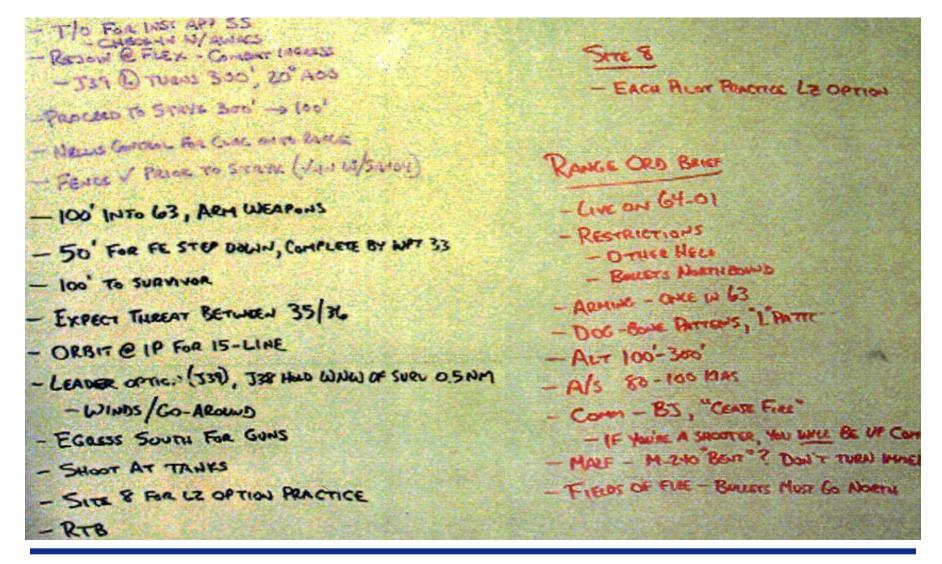




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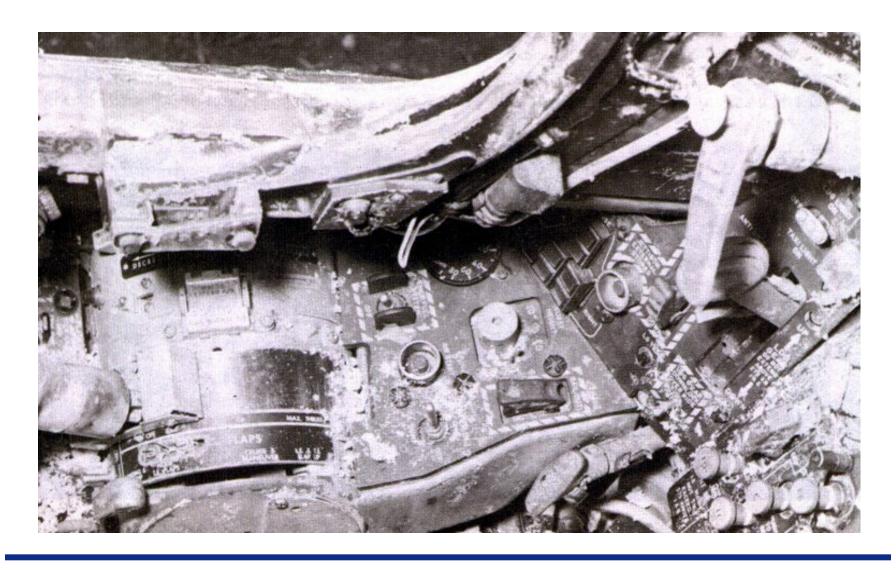


















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Witness Interviews



- Ground rules
 - Privileged or not privileged
 - Not sworn
- Types of witnesses
 - Participant
 - Observer
 - Expert
- Value of testimony
 - Perishable details fade with time
 - Relative value by type of witness
 - Participants first priority, observers next



Witness Interviews



- Field Interview
 - Conduct As Early as Possible
 - Recording is better than taking notes
 - Microphones eliminates most background noise
 - Have Security Forces, PA, or ATC assist you in locating witnesses
 - If they have to leave before you can interview them, get names, addresses, telephone numbers
- Board Interview
 - Best for critical witnesses
 - Not an interrogation
 - Put the witness at ease



Witness Interviews



- Do not:
 - Administer truth serums or other drugs
 - If a witness provides a statement while under medication, add a notation to their statement.
 - Use hypnotic techniques
 - Polygraph tests
 - Administer an oath
- If a witness refuses to testify—even after offering safety privilege—contact AFSC/JA



Witness Interviews



- Criminal misconduct
 - If you suspect criminal misconduct, stop the interview and report this fact to the convening authority
 - The convening authority (with the assistance of HQ AFSC/JA) will determine whether or not the investigation will continue
- For commercial or spacelift mishap: Refrain from interviewing witnesses until the FAA/NTSB representative has arrived, unless there is a compelling reason to take the witness' statement(s) immediately.



ISB Do's and Don'ts



- Don't Rely on Memory
- Don't Go Flipping/Moving Parts About
 - aka "Kicking Tin"
- Don't Move Things Without Photographing
- Don't Jump To Conclusions
- Don't Dismantle Components without Marking
- Don't Look to Place Blame
- Don't Look for Only One Cause
- Don't Outsid DOCUMENT, DOCUMENT, DOCUMENT!

- DO Talk With Witnesses ASAP
- DO Visit The Scene for First Hand Info
- DO Remember, This is Your Full Time Job Until the Investigation is Complete

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Privilege



- Exempt by law from disclosure/No FOIA
- "Limited-use" = Within AF Safety
- Avoids High Legal Standard
- Allows quick action for preventing mishaps



Safety Privilege



What Is Protected?

- Witness Testimony (Confidentiality)
- Contractor Information
- Board Analysis

- Findings, Causes, Recommendations
- Simulations, Video Reenactments
 - Anything "staged" by the investigators
- Life sciences reports



Offering Confidentiality



- President
 - Usually extended to Board Members
- Investigating Officers (Single Investigator)
- Only AFI 91-204 investigations
- Do not offer confidentiality on a blanket basis. The decision should be based upon:
 - A witness or contractor's reluctance to cooperate
 - Involvement in the mishap sequence
 - Apparent self-interest in not disclosing information.
- If offered confidentiality, DoD members MUST testify unless invoking 5th Amendment rights
- If a witness lies under a promise of confidentiality, all of that witnesses testimony loses safety privilege



Offering Confidentiality



- When are you authorized to offer a promise of confidentiality?
 - Authorized on only the following investigations:
 - Nuclear
 - Space
 - Aviation
 - Guided missile
 - Directed energy
 - MAY be used on complex systems, military-unique items, or military -unique operations or exercises, where a witness or involved contractor will not provide a statement of information without a promise of confidentiality
- Who can have it?
 - Any witness or contractor who built, designed or maintained the equipment in order to encourage full cooperation



Limits On Confidentiality



- NOT AUTHORIZED for the following mishaps:
 - Explosive and chemical agents
 - Afloat
 - Motor Vehicle
 - Off-duty Military
 - Ground and industrial
 - HATRs



Safety Privilege



Access to Information

- Commanders with mishap prevention responsibilities
- Safety Officers
- Flight Surgeons
- Flight and Missile Crews
- Only within respective weapons system



Safety Privilege



Protection

- Critical to future of benefits
 - If we don't show good faith, courts won't honor
- DO NOT Discuss Safety Information outside Safety channels (need to know)
- Control distribution of Safety Messages

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Mishaps With Fatalities....



- Psychological Support
- CISM: Critical Incident Stress Management
 - Covered by AFI 44-153
 - Composed of Medical, mental health, chaplain, etc
 - Serves families, aircrew, search and rescue, recovery personnel, etc.....
 - Have available at mishap location.....





Impounding Evidence



SIBs and single investigators have inherent priorities over other activities and investigations connected to the mishap, including the right to impound Air Force property involved in the mishap. Group commanders or higher will need to act on their impoundment requests.



How PA Supports Your Board



- Guides News Media's Access to Mishap Site
 - Relationship with Local Media very important
 - OSC can't restrict access on private property
 - PA can explain hazards, keep media at distance
 - Deflect publishing of remains photos



Lessons Learned



- Secure evidence.....and don't tamper with it!
- Conduct recorded interviews with crews immediately.....

But not to the detriment of medical care!

- Methodical, unhurried turnover from ISB to the permanent SIB
 - Stick around for a few days, keep tabs on ISB members for questions that arise
- Privilege Statement on Initial Interviews



Final Thoughts



- Be Prepared
 - Annual refresher training
- Safety Investigations are Very Important
 - All Class A's have CSAF Interest
 - You Work for the MAJCOM/CC (class As) or NAF/CC (class Bs)
- Ultimate Objective is to Prevent Future Mishaps!!



It can happen here!













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